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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,774	10/14/2003	Seong Deok Ahn	2013P113	5251

8791 7590 01/09/2007  
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EXAMINER

NGUYEN, KIMNHUNG T

ART UNIT	PAPER NUMBER
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2629

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/715,774

Applicant(s)

AHN ET AL.

Examiner

Kimnhung Nguyen

Art Unit

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
- Paper No(s)/Mail Date 10/14/03.

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. This application has been examined. The claims 1-12 are pending. Claims 13-20 are withdrawn. The examination results are as following.

#### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sheridan (US 5,917,646) in view of Gates et al. (US 6,704,133).

As to claim 1, Sheridan discloses in fig. 2, a template type electrophoretic display (see plate 154, fig. 15A) comprising a lower electrode (24b, fig. 2) formed on an under layer; an insulating template (154) formed on the lower electrode layer and having a plurality of holes of smaller size than the wavelength of visible rays region; a dielectric fluid filling the holes (cavities 152) and having a color (see col. 15, lines 34-67, and col. 18, lines 23-30), a plurality of charged particles (ball 156) suspended in the dielectric fluid each of the plurality of holes having a color different from the color of the dielectric fluid (see col. 4, lines 45-52), and upper electrode layer (24a) formed on the insulating template. However, Sheridan does not disclose a lower electrode protection layer and an upper electrode protection layer on the template.

Gates et al. discloses in fig. 1, the lower electrode protection layer (140) and an upper electrode protection layer (140) formed on the substrate (see fig. 1, see col. 20, lines 2-13).

Art Unit: 2629

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the lower electrode protection layer and an upper electrode protection layer formed on the substrate as taught by Gates et al. into the template type electrophoretic display of Sheridan for producing the claimed invention because this would protect the outermost layers of the front side and rear side of the display overlay (see Gates, see col. 20, lines 5-8).

As to claim 2, Sheridan discloses further, wherein the charged particles have the same specific gravity as the dielectric fluid (see col. 4, lines 45-52).

As to claim 3, Sheridan discloses further, wherein the lower electrode and the upper electrode are shaped to form an array of pixels corresponding to the plurality of holes in the insulating template (see fig. 18).

As to claim 4, Sheridan discloses further in fig. 15A, wherein the charged particles (156) are smaller than the holes (152) in the insulating template.

As to claim 5, Sheridan discloses further, wherein the charged particles are red, green or blue (see fig. 16, col. 18, lines 23-25).

As to claim 9, Sheridan discloses further, wherein the lower electrode is composed of at least one electrode.

As to claim 10, Sheridan discloses further, wherein the lower electrode is composed opaque organic material see fig. 16.

As to claims 11, 12, Sheridan discloses further, wherein the lower electrode (24b) is composed of transparent inorganic material (see col. 5, lines 19-21).

Art Unit: 2629

As to claims 6-8, Sheridon and Gates et al. disclose wherein the diameter of the holes in the insulating template should have a unit by nm, or wherein a separation distance between holes in the insulating template should have a unit by nm, or the thickness of the insulating template should have a unit by micrometer. However, Sheridon and Gates et al. do not disclose wherein the diameter of the holes in the insulating template is 10-400 nm, or wherein a separation distance between holes in the insulating template is less than 100 nm, or the thickness of the insulating template is 10-1000 micrometer.

It would have been obvious to one of ordinary skill in the art at the time the invention to have the diameter of the holes in the insulating template is 10-400 nm, or wherein a separation distance between holes in the insulating template is less than 100 nm, or the thickness of the insulating template is 10-1000 micrometer because these would be a number of desired choice of the invention.

### *Correspondence*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimnhung Nguyen whose telephone number is (571) 272-7698. The examiner can normally be reached on MON-FRI, FROM 8:30 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached on (571) 272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2629

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kimnhung Nguyen  
December 30, 2006



**RICHARD HJERPE**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**